HP ProLiant Moonshot Cartridge User and Maintenance Guide

Abstract

This document is for the person who installs, administers, services, and troubleshoots cartridges. This guide describes identification and maintenance procedures, and specifications and requirements for hardware components and software. HP assumes you are qualified in the servicing of computer equipment, trained in recognizing hazards in products, and are familiar with weight and stability precautions.

Part Number: 711776-001
April 2013
Edition: 1

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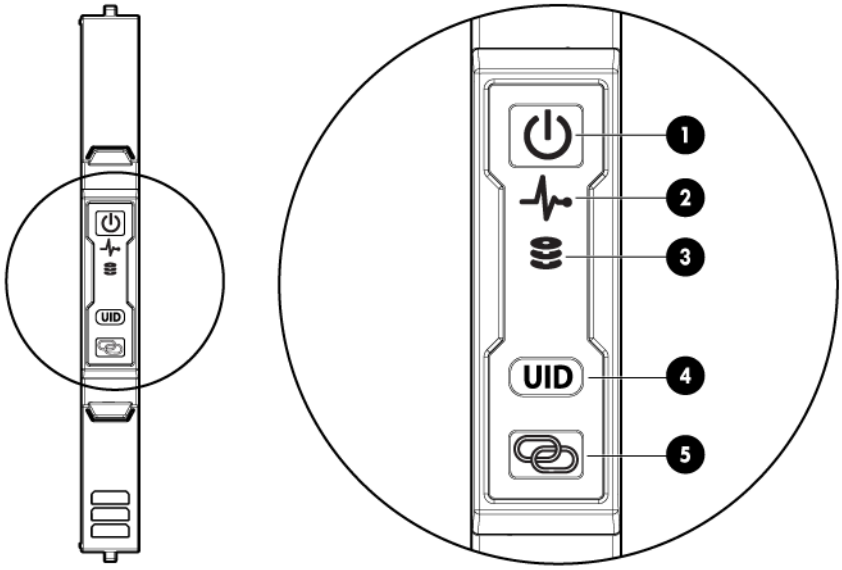
Contents

Component identification 5
Cartridge LEDs and buttons 5
Cartridge components 6
Operations 7
Extend the chassis from the rack 7
Remove the access panel 8
Install the access panel 9
Remove the cartridge blank 9
Remove the cartridge 10
Install the cartridge 10
Setup 12
Overview 12
Installing and configuring an HP Moonshot 1500 Chassis 12
Installing and configuring the switch and uplink modules 12
Installing the drive 12
Installing the cartridge 13
Powering up the chassis 13
Powering up the cartridge 13
Configuring the cartridge 14
Installing the operating system 14
Registering the server 14
Hardware options installation 15
Drive option 15
Software and configuration utilities 16
HP product QuickSpecs 16
HP Moonshot iLO Chassis Management Firmware 16
HP Moonshot iLO CM Integrated Management Log 16
HP Moonshot iLO CM Event Log 16
HP Insight Cluster Management Utility 16
HP Moonshot Component Pack 17
Troubleshooting 18
Troubleshooting resources 18
Illustrated parts catalog 19
Customer self repair 19
Parts only warranty service 19
Cartridge replaceable components 20
Removal and replacement procedures 21
Preparation procedures 21
Safety considerations 21
Preventing electrostatic discharge 21
Symbols on equipment 21
Warnings and cautions 22

Drive 22
Cartridge 23
Cartridge blank 26
System battery 27
Regulatory information 29
Safety and regulatory compliance 29
Turkey RoHS material content declaration 29
Ukraine RoHS material content declaration 29
Warranty information 29
Electrostatic discharge 30
Preventing electrostatic discharge 30
Grounding methods to prevent electrostatic discharge 30
Specifications 31
Chassis environmental specifications 31
Chassis specifications 31
Support and other resources 32
Before you contact HP 32
HP contact information 32
Acronyms and abbreviations 33
Documentation feedback 35
Index 36

Component identification

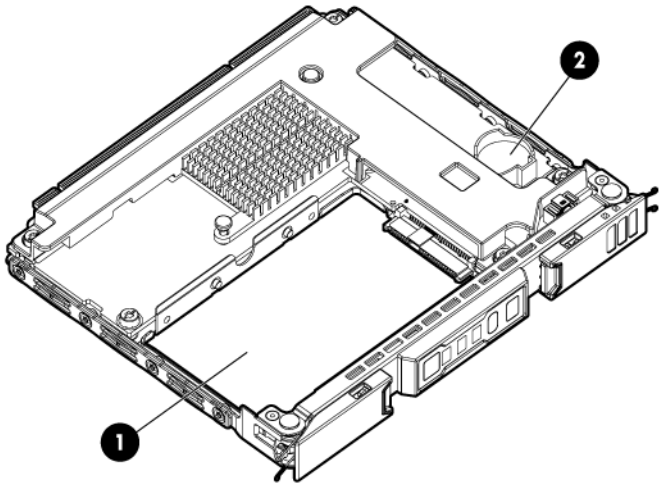
Cartridge LEDs and buttons



Item	Description	Status
1	Cartridge power LED/button	Green = Normal operation Amber = Standby operation Off = No power
2	Cartridge health LED	Green = Normal operation Flashing amber = Degraded condition Flashing red = Critical condition Off = No power
3	Drive LED*	Green = Activity Off = No activity
4	Cartridge UID LED/button	Blue = Cartridge ID is selected. Flashing blue = Cartridge firmware update is in progress. Off = Cartridge ID is not selected.
5	Cartridge link LED/button**	Flashing white = Cartridges are linked. Off = Cartridge is not linked to other cartridges.

*Depending on the cartridge installed, there may be 0, 1, or 2 drive LEDs.
**The cartridge link LED flashes for 10 seconds after the link button is pressed.

Cartridge components



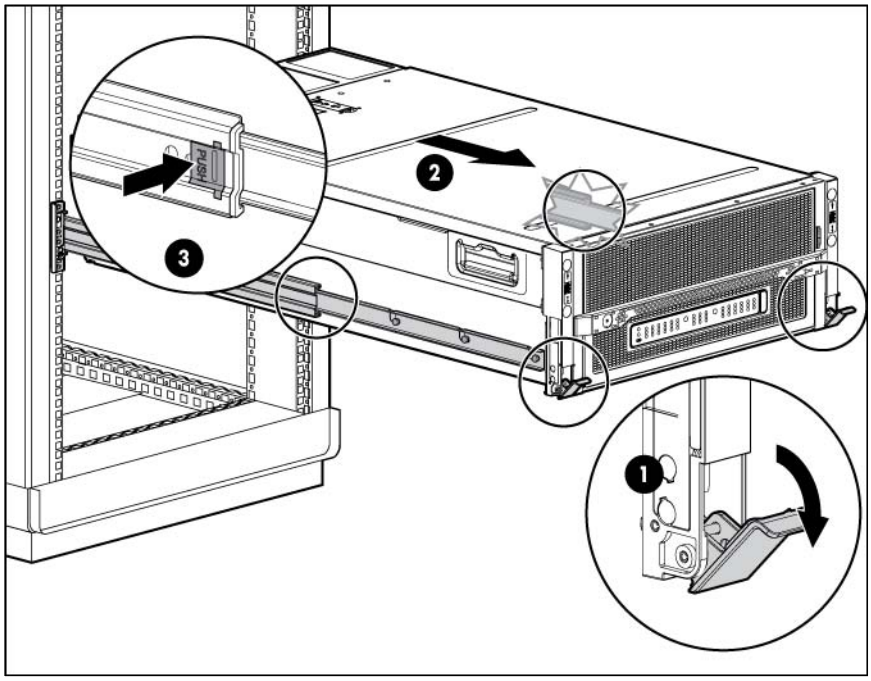
Item	Description
1	Drive bay
2	Cartridge battery

Operations

Extend the chassis from the rack

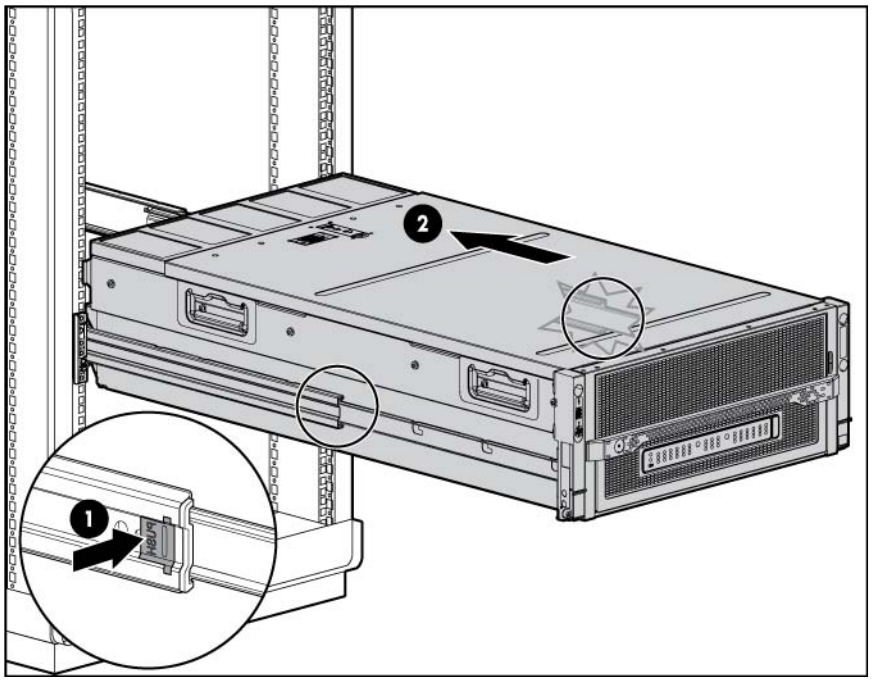
1. Pull down the quick release levers on each side of the chassis.
2. Extend the chassis from the rack.

WARNING: To reduce the risk of personal injury or equipment damage, be sure that the rack is adequately stabilized before extending a component from the rack.



3. After performing the installation or maintenance procedure, slide the chassis back into the rack, and then press the chassis firmly into the rack to secure it in place.

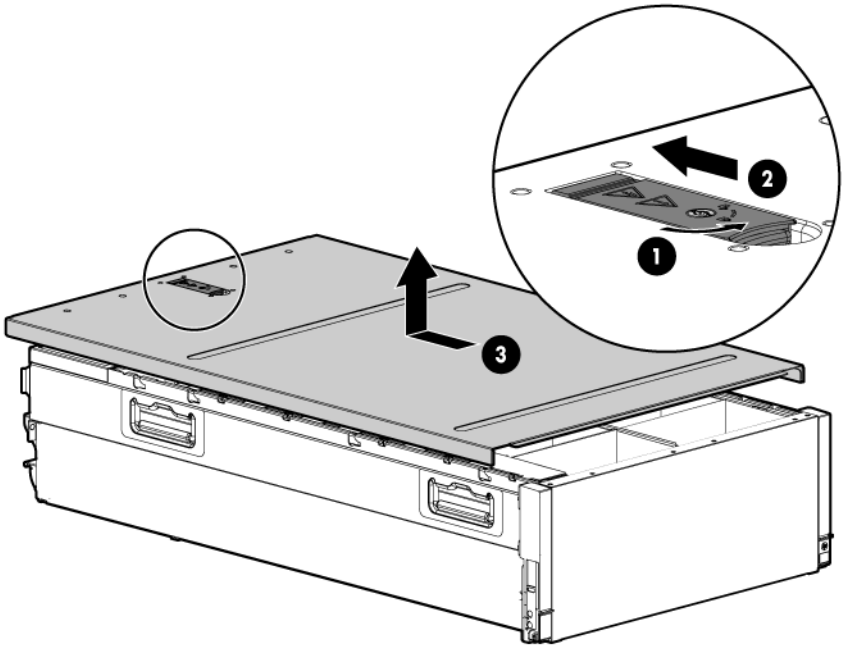
WARNING: To reduce the risk of personal injury, be careful when pressing the server rail-release latches and sliding the server into the rack. The sliding rails could pinch your fingers.



Remove the access panel

IMPORTANT: After performing a procedure inside the chassis, always install the access panel on the chassis when complete. Do not operate the chassis for long periods of time with the access panel removed.

1. Release the access panel latch.
2. Slide the access panel back about 1.5 cm (0.5 in).
3. Lift and remove the access panel.



NOTE: Turn the access panel over to locate the hood labels. These labels provide information on installing various options, flexible memory configurations, LED status indicators, and switch settings.

Install the access panel

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

CAUTION: To prevent damage to electrical components, properly ground the cartridge before beginning any installation procedure. Improper grounding can cause ESD.

CAUTION: Do not operate the chassis with the access panel open or removed. Operating the chassis in this manner results in improper airflow and improper cooling that can lead to thermal damage.

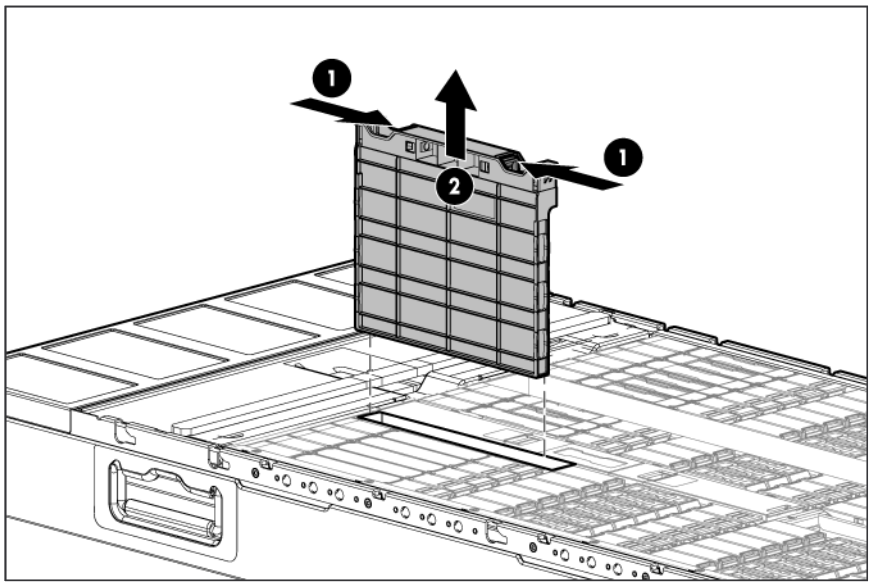
To install the component:

1. Place the access panel on top of the chassis.
2. Slide the access panel toward the front of the chassis. The access panel locks into position.

Remove the cartridge blank

CAUTION: For proper cooling, be sure that a cartridge or a cartridge blank is always installed in each cartridge slot in the chassis. When replacing a cartridge, leave the cartridge slot empty for no more than 30 seconds. Failure to do so can disrupt airflow in the chassis.

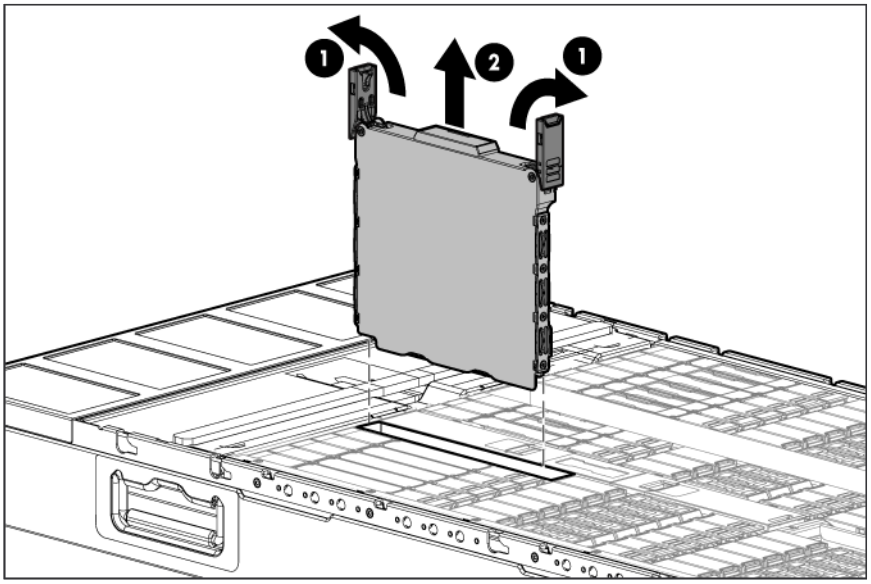
1. Extend the chassis from the rack (on page 7).
2. Remove the access panel (on page 8).
3. Remove the component as indicated.



Remove the cartridge

CAUTION: For proper cooling, be sure that a cartridge or a cartridge blank is always installed in each cartridge slot in the chassis. When replacing a cartridge, leave the cartridge slot empty for no more than 30 seconds. Failure to do so can disrupt airflow in the chassis.

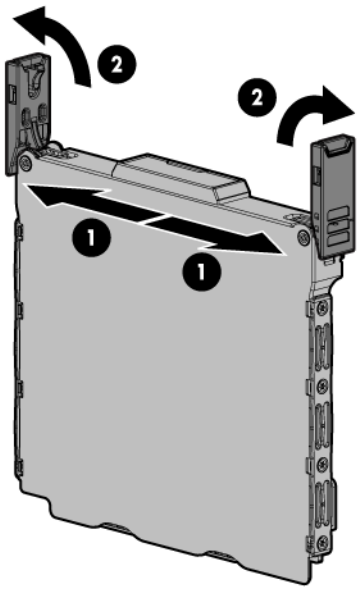
1. Power down the cartridge.
2. Extend the chassis from the rack (on page 7).
3. Remove the access panel (on page 8).
4. Remove the cartridge from the chassis.



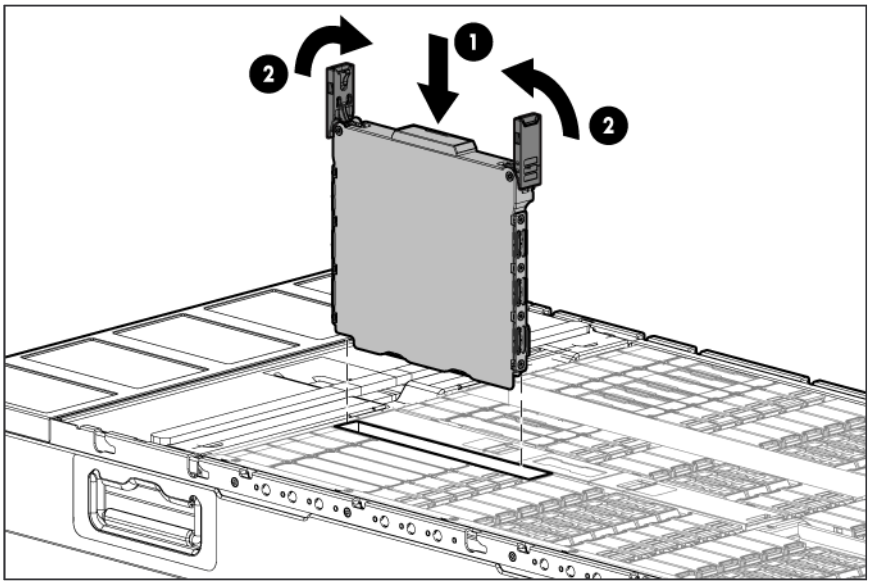
Install the cartridge

1. Extend the chassis from the rack (on page 7).
2. Remove the access panel (on page 8).

3. Prepare the cartridge.



4. Align and install the cartridge into the chassis.



5. Install the access panel (on page 9).

Setup

Overview

Installation of a cartridge requires the following steps:

1. Install and configure an HP Moonshot 1500 Chassis ("Installing and configuring an HP Moonshot 1500 Chassis" on page 12).
2. Install and configure the switch and uplink modules ("Installing and configuring the switch and uplink modules" on page 12).
3. Install the drive ("Installing the drive" on page 12).
4. Install the cartridge (on page 10).
5. Power up the chassis ("Powering up the chassis" on page 13).
6. Power on the cartridge, if necessary ("Powering up the cartridge" on page 13).
7. Configure the cartridge ("Configuring the cartridge" on page 14).
8. Install the operating system ("Installing the operating system" on page 14).

Installing and configuring an HP Moonshot 1500 Chassis

Before performing any cartridge-specific procedures, install an HP ProLiant Moonshot 1500 Chassis. For more information on installing a chassis, see *HP Moonshot 1500 Chassis Setup and Installation Guide* in the HP Moonshot Information Library (http://www.hp.com/go/moonshot/docs).

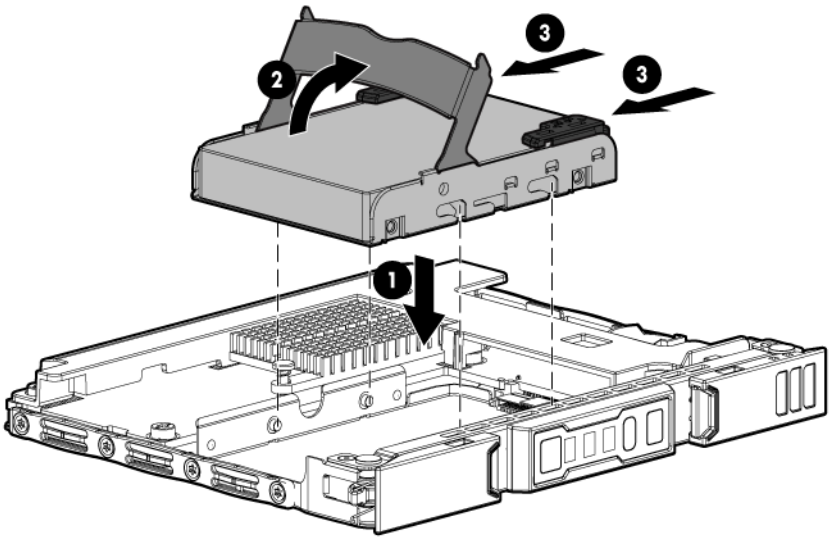
Installing and configuring the switch and uplink modules

For specific steps to install the switch modules and uplink modules, see the switch documentation in the HP Moonshot Information Library (http://www.hp.com/go/moonshot/docs).

Installing the drive

1. Extend the chassis from the rack (on page 7).
2. Remove the access panel (on page 8).
3. Remove the cartridge (on page 10).
4. Remove any drive installed on the cartridge ("Drive" on page 22).

5. Install the drive as indicated.



6. Install the cartridge (on page 10).
7. Install the access panel (on page 9).

Installing the cartridge

1. Do one of the following:
   - Remove the cartridge blank (on page 9).
   - Remove a cartridge ("Remove the cartridge" on page 10).
2. Install the cartridge (on page 10).

Powering up the chassis

If the chassis was powered off while installing the cartridge, then power up the chassis. The cartridges are hot-pluggable and do not require that you power down the chassis for installation.

1. Connect the power cables to the power supplies.
2. Connect the power cables to the power source (UPS or wall outlet) or to an installed PDU.
3. Wait while the chassis powers on. Verify the status of the chassis power LED located on the front panel display on the chassis. For more information on the chassis power LED status, see the *HP Moonshot 1500 Chassis Setup and Installation Guide* in the HP Moonshot Information Library (http://www.hp.com/go/moonshot/docs).

Powering up the cartridge

Power on the cartridge physically by pressing the cartridge power button or remotely by using CLI console, IPMI, or SL-APM. Wait while the cartridge boots. The cartridge power LED illuminates solid green when the cartridge is powered on and ready for use.

Configuring the cartridge

Log on to the iLO CM firmware, select the iLO zone associated with the cartridge, and update the cartridge firmware.

For more information, see the *HP Moonshot iLO Chassis Management Firmware User Guide* in the HP Moonshot Information Library (http://www.hp.com/go/moonshot/docs).

Installing the operating system

For the latest information on supported operating systems, see the HP website (http://www.hp.com/go/supportos).

To deploy an operating system image to the cartridge in a PXE environment, ensure DHCP and image deployment server configurations have been made.

1. Obtain the required cartridge MAC addresses by selecting the appropriate zone and running the following command:

   ```
   show node macaddr all
   ```

2. Ensure serial console options are defined in the installation configuration or answer files:

   ```
   console=ttyS0,9600n8
   ```

3. To observe boot messages and installation progress, open a separate terminal session with the VSP of the targeted cartridge:

   ```
   connect node vsp CxNy
   ```

   All cartridges boot to PXE by default.

4. Boot or cycle power to the targeted cartridge:

   ```
   set node power [ON|OFF|SHUTDOWN]
   ```

5. From the VSP session, monitor the PXE boot messages and observe the installation process.
6. When complete, verify defined system settings.

Registering the server

To register the server, see the HP Registration website (http://register.hp.com).

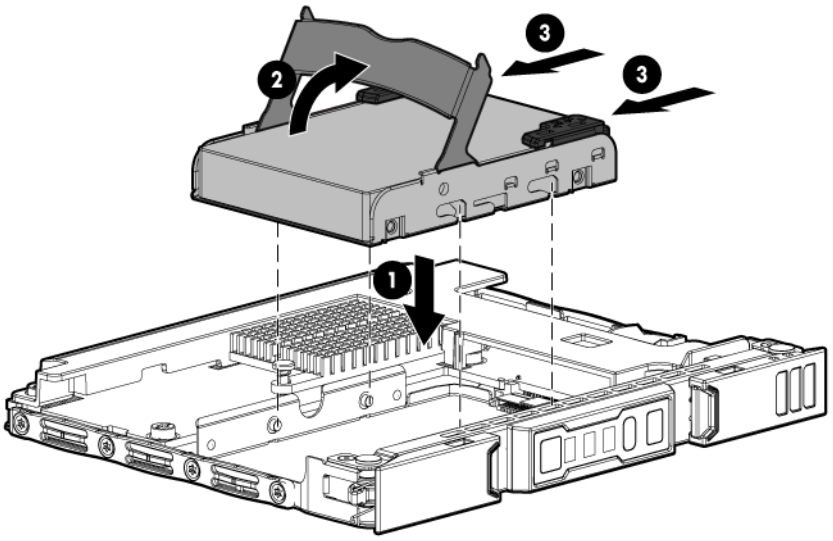
Hardware options installation

Drive option

For more information about the drives supported on the cartridge, see the HP product Quickspecs on the HP website (http://www.hp.com/go/productbulletin).

To install the component:

1. Extend the chassis from the rack (on page 7).
2. Remove the access panel (on page 8).
3. Determine the status of the drive from the drive LED definitions ("Cartridge LEDs and buttons" on page 5).
4. Remove the cartridge (on page 10).
5. Remove any drive installed on the cartridge ("Drive" on page 22).
6. Install the drive on the cartridge.



7. Install the cartridge (on page 10).
8. Install the access panel (on page 9).

Software and configuration utilities

HP product QuickSpecs

For more information about product features, specifications, options, configurations, and compatibility, see the product QuickSpecs on the HP Product Bulletin website (http://www.hp.com/go/productbulletin).

HP Moonshot iLO Chassis Management Firmware

Moonshot iLO CM firmware is the gateway for aggregated chassis management on HP Moonshot. The iLO CM firmware reduces cost and power by sharing four iLOs across the nodes and other Moonshot components. As a single point of access to the chassis, iLO CM firmware allows you to configure, update, and operate HP Moonshot through CLI, IPMI, and remote serial console access.

For more information, see the *HP Moonshot iLO Chassis Management Firmware User Guide* in the HP Moonshot Information Library (http://www.hp.com/go/moonshot/docs).

HP Moonshot iLO CM Integrated Management Log

The iLO CM IML records hundreds of events and stores them in an easy-to-view form. The iLO CM IML timestamps each event with 1-minute granularity. To view recorded events in the iLO CM IML, use the `show log iml` command in iLO CM firmware. To save the log, cut and paste the content from the session window or set session logging in the SSH client.

For more information, see the *HP Moonshot iLO Chassis Management Firmware User Guide* in the HP Moonshot Information Library (http://www.hp.com/go/moonshot/docs).

HP Moonshot iLO CM Event Log

The iLO CM Event Log is an operating system-independent log that maintains a record of events by date and time. Logged events include major events, such as a power outage or a reset, and iLO CM firmware events. To view recorded events in the iLO CM Event Log, use the `show log ilo` command in iLO CM firmware. To save the log, cut and paste the content from the session window or set session logging in the SSH client.

For more information, see the *HP Moonshot iLO Chassis Management Firmware User Guide* in the HP Moonshot Information Library (http://www.hp.com/go/moonshot/docs).

HP Insight Cluster Management Utility

HP Insight CMU is an efficient and robust hyperscale cluster lifecycle management framework and suite of tools for large Linux clusters. A simple graphical interface enables an at-a-glance view of the entire cluster across multiple metrics, provides frictionless scalable remote management and analysis, and allows rapid software provisioning to all system nodes. HP Insight CMU makes cluster management more user friendly, efficient, and error-free than if it were being managed by scripts, or on a node-by-node basis. HP Insight CMU is highly flexible and customizable, offers both GUI and CLI interfaces, and is used to deploy a range

of software environments, from simple compute farms to highly customized, application-specific configurations.

For more information on HP Insight CMU features and links to technical documentation, Quickspecs, and a product demo, see the HP website (http://www.hp.com/go/cmu).

To download the product, go to the HP Software Depot (https://h20392.www2.hp.com/portal/swdepot/index.do). Click **HP Insight Management**, then click **Insight Cluster Management**.

HP Moonshot Component Pack

MCP is a comprehensive firmware solution delivered as a single file. The solution is tested on the HP Moonshot and is delivered as a family of bundles. The MCP deploys firmware updates through a CLI that flashes the firmware components. Flashing the firmware components consists of delivering an update file to the iLO CM firmware, which distributes the flash file as appropriate. If you cannot be connected to the Internet during the setup, download the latest MCP from the HP website (http://www.hp.com/go/servers/moonshot/download).

Troubleshooting

Troubleshooting resources

The *HP Moonshot Troubleshooting Guide* provides procedures for resolving common problems and comprehensive courses of action for fault isolation and identification, issue resolution, and software maintenance on the HP Moonshot. The document is available in the HP Moonshot Information Library (http://www.hp.com/go/moonshot/docs).

Illustrated parts catalog

Customer self repair

HP products are designed with many Customer Self Repair (CSR) parts to minimize repair time and allow for greater flexibility in performing defective parts replacement. If during the diagnosis period HP (or HP service providers or service partners) identifies that the repair can be accomplished by the use of a CSR part, HP will ship that part directly to you for replacement. There are two categories of CSR parts:

- **Mandatory**—Parts for which customer self repair is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service.
- **Optional**—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that HP replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

NOTE: Some HP parts are not designed for customer self repair. In order to satisfy the customer warranty, HP requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

Based on availability and where geography permits, CSR parts will be shipped for next business day delivery. Same day or four-hour delivery may be offered at an additional charge where geography permits. If assistance is required, you can call the HP Technical Support Center and a technician will help you over the telephone. HP specifies in the materials shipped with a replacement CSR part whether a defective part must be returned to HP. In cases where it is required to return the defective part to HP, you must ship the defective part back to HP within a defined period of time, normally five (5) business days. The defective part must be returned with the associated documentation in the provided shipping material. Failure to return the defective part may result in HP billing you for the replacement. With a customer self repair, HP will pay all shipping and part return costs and determine the courier/carrier to be used.

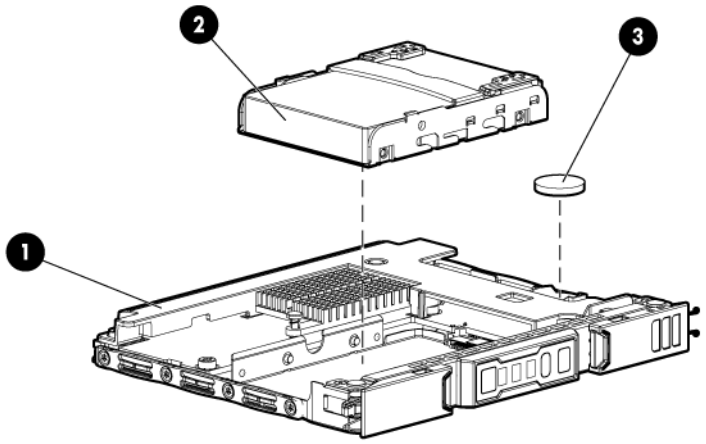
For more information about HP's Customer Self Repair program, contact your local service provider. For the North American program, refer to the HP website (http://www.hp.com/go/selfrepair).

Parts only warranty service

Your HP Limited Warranty may include a parts only warranty service. Under the terms of parts only warranty service, HP will provide replacement parts free of charge.

For parts only warranty service, CSR part replacement is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service.

Cartridge replaceable components



Item	Description	Spare part number	Customer self repair (on page 19)
1	HP ProLiant Moonshot Cartridge	708917-001	Mandatory[1]
2	Drives	—	—
	a) 500-GB, SATA, SFF, 7,200-rpm, 6G*	632142-001	Mandatory[1]
	b) 1-TB, SATA, SFF, 7,200-rpm, 6G*	632143-001	Mandatory[1]
3	System battery	234556-001	Mandatory[1]
4	Cartridge blank*	712680-001	Mandatory[1]

* Not shown

[1]Mandatory—Parts for which customer self repair is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service.

[2]Optional—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that HP replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

[3]No—Some HP parts are not designed for customer self repair. In order to satisfy the customer warranty, HP requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

Removal and replacement procedures

Preparation procedures

To access some components and perform certain service procedures, you must perform one or more of the following procedures:

- Remove the access panel (on page 8).
- Install the access panel (on page 9).
- Remove the cartridge (on page 10).
- Install the cartridge (on page 10).

Safety considerations

Before performing service procedures, review all the safety information.

Preventing electrostatic discharge

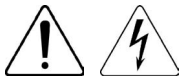
To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Symbols on equipment

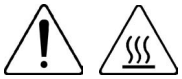
The following symbols may be placed on equipment to indicate the presence of potentially hazardous conditions.



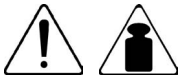
This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.
WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.

This symbol indicates the presence of electric shock hazards. The area contains no user or field serviceable parts. Do not open for any reason.
WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure.

This symbol on an RJ-45 receptacle indicates a network interface connection.
WARNING: To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.



This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.
WARNING: To reduce the risk of injury from a hot component, allow the surface to cool before touching.



43.09 kg
95.00 lb

This symbol indicates that the component exceeds the recommended weight for one individual to handle safely.
WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.

These symbols, on power supplies or systems, indicate that the equipment is supplied by multiple sources of power.
WARNING: To reduce the risk of injury from electric shock, remove all power cords to completely disconnect power from the system.

Warnings and cautions

Before installing a chassis, be sure that you understand the following warnings and cautions.

WARNING: To reduce the risk of electric shock or damage to the equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Connect the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Disconnect the power cord from the power supply to disconnect power to the equipment.
- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the chassis.

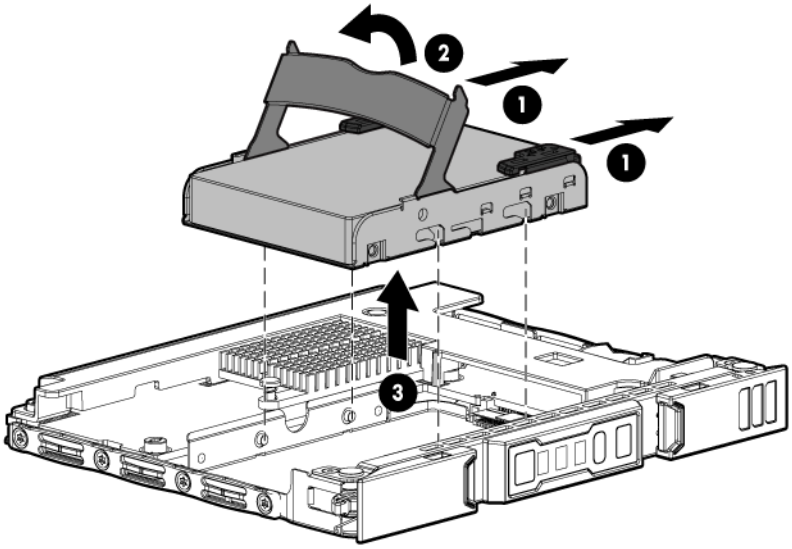
CAUTION: Do not operate the chassis for long periods with the access panel open or removed. Operating the chassis in this manner results in improper airflow and improper cooling that can lead to thermal damage.

Drive

To remove the component:

1. Extend the chassis from the rack (on page 7).
2. Remove the access panel (on page 8).

3. Determine the status of the drive from the drive LED definitions ("Cartridge LEDs and buttons" on page 5).
4. Remove the cartridge (on page 10).
5. Back up all data on the drive.
6. Remove the drive.



To replace the components, reverse the removal procedure.

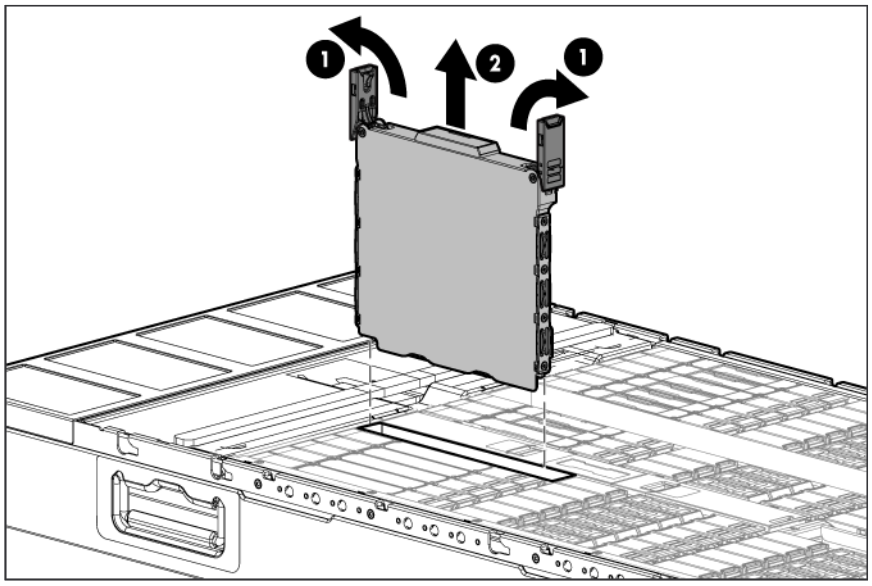
Cartridge

When a cartridge fails and a replacement cartridge is installed in the chassis, always update the serial number and the product ID to preserve the warranty entitlement for that cartridge.

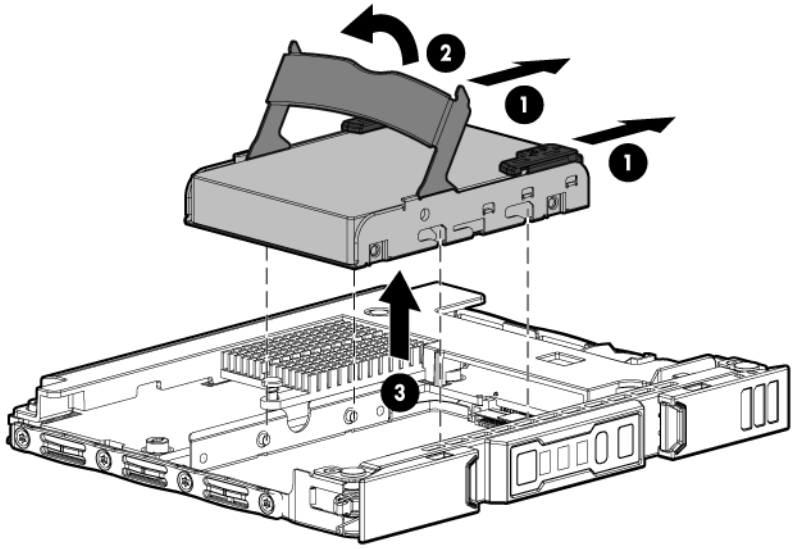
To remove the component:

1. Log in to the iLO CM firmware. For more information about the iLO CM firmware, see the HP Moonshot iLO Chassis Management Firmware User Guide on the HP website (http://www.hp.com/go/moonshot/docs).
2. Make note of the cartridge slot number for the cartridge being replaced.
3. Capture the serial number using the following command:
   `SHOW CARTRIDGE SN C<cartridge number>`
4. Capture the product ID using the following command:
   `SHOW CARTRIDGE PID C<cartridge number>`
5. If the failed cartridge is powered on, then power down the failed cartridge using the following command:
   `SET NODE POWER SHUTDOWN C<cartridge number>N<node number>`
6. Power down the cartridge.
7. Extend the chassis from the rack (on page 7).
8. Remove the access panel (on page 8).

9. Remove the failed cartridge.

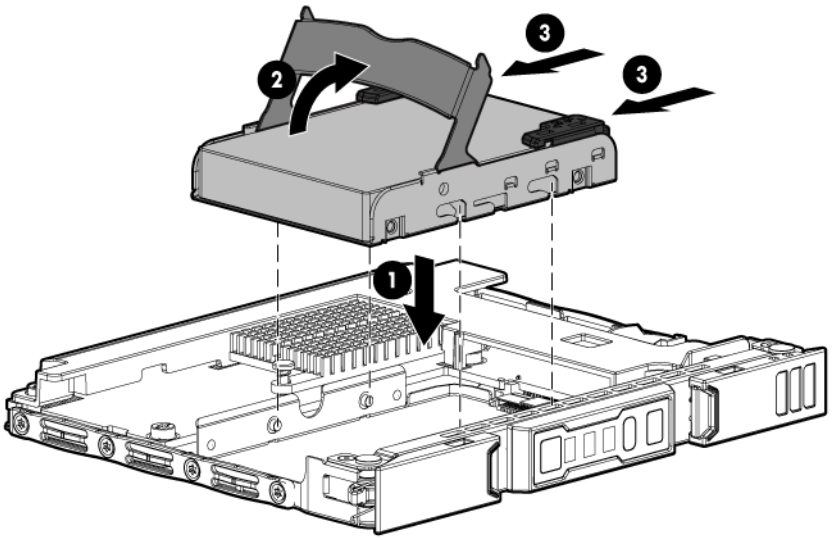


10. Remove the drive from the failed cartridge, if installed.

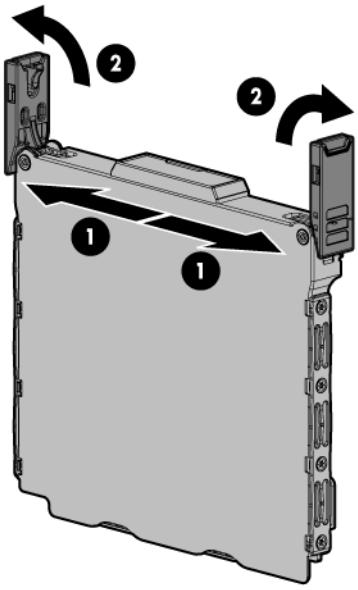


To replace the component:

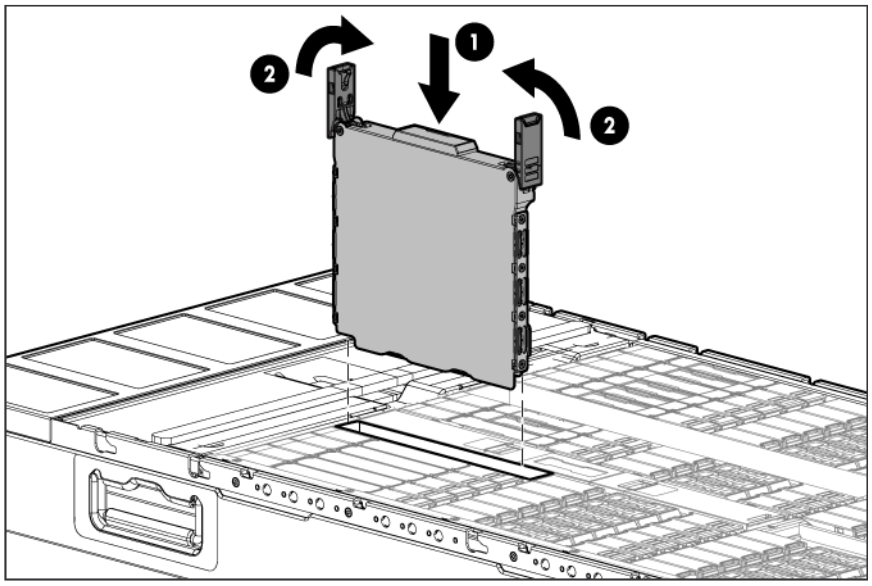
1. Install the drive from the failed cartridge on the replacement cartridge.



2. Prepare the replacement cartridge for installation.



3. Install the replacement cartridge.



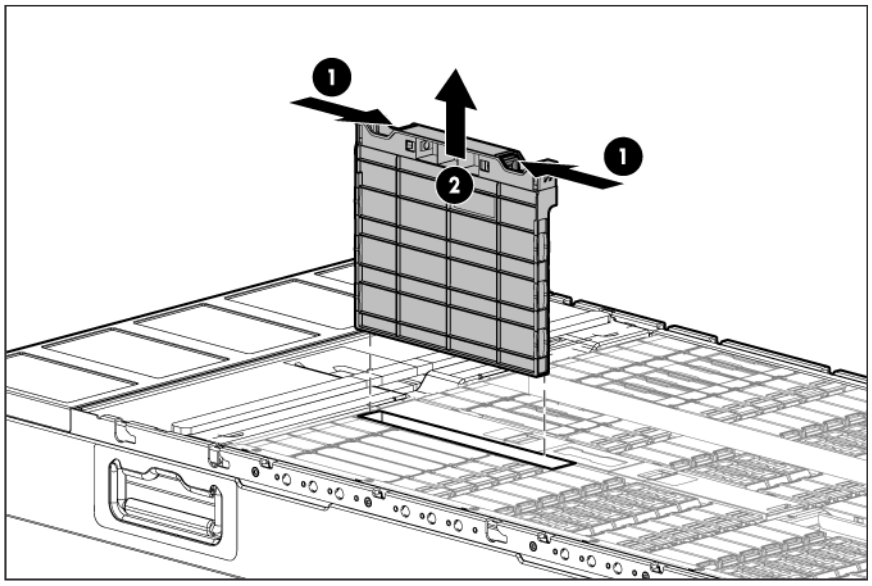
4. Install the access panel (on page 9).
5. Allow the chassis manager to discover the replacement cartridge. The link LED flashes when this process is complete.
6. Assign the original serial number to the replacement cartridge using the following command:
   `SET CARTRIDGE SN <original SN> C<cartridge number>`
7. Assign the original product ID number to the replacement cartridge using the following command:
   `SET CARTRIDGE PID <original PID> C<cartridge number>`

Cartridge blank

To remove the component:

1. Extend the chassis from the rack (on page 7).
2. Remove the access panel (on page 8).

3. Remove the cartridge blank from the chassis.



To replace the component, reverse the removal procedure.

System battery

If the cartridge no longer automatically displays the correct date and time, you might have to replace the battery that provides power to the real-time clock. Under normal use, battery life is 5 to 10 years.

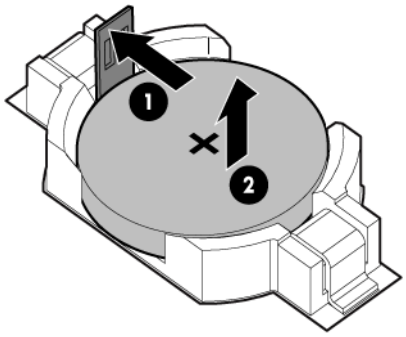
⚠ **WARNING:** The computer contains an internal lithium manganese dioxide, a vanadium pentoxide, or an alkaline battery pack. A risk of fire and burns exists if the battery pack is not properly handled. To reduce the risk of personal injury:

- Do not attempt to recharge the battery.
- Do not expose the battery to temperatures higher than 60°C (140°F).
- Do not disassemble, crush, puncture, short external contacts, or dispose of in fire or water.
- Replace only with the spare designated for this product.

To remove the component:

1. Power down the cartridge.
2. Extend the chassis from the rack (on page 7).
3. Remove the access panel (on page 8).
4. Remove the cartridge ("Cartridge" on page 23).
5. Locate the battery on the cartridge ("Cartridge replaceable components" on page 20).

6. Remove the battery.



To replace the component, reverse the removal procedure.

For more information about battery replacement or proper disposal, contact an authorized reseller or an authorized service provider.

Regulatory information

Safety and regulatory compliance

For safety, environmental, and regulatory information, see *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products*, available at the HP website (http://www.hp.com/support/Safety-Compliance-EnterpriseProducts).

Turkey RoHS material content declaration

Türkiye Cumhuriyeti: EEE Yönetmeliğine Uygundur

Ukraine RoHS material content declaration

Обладнання відповідає вимогам Технічного регламенту щодо обмеження використання деяких небезпечних речовин в електричному та електронному обладнанні, затвердженого постановою Кабінету Міністрів України від 3 грудня 2008 № 1057

Warranty information

HP ProLiant and X86 Servers and Options (**http://www.hp.com/support/ProLiantServers-Warranties**)

HP Enterprise Servers (**http://www.hp.com/support/EnterpriseServers-Warranties**)

HP Storage Products (**http://www.hp.com/support/Storage-Warranties**)

HP Networking Products (**http://www.hp.com/support/Networking-Warranties**)

Electrostatic discharge

Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding methods to prevent electrostatic discharge

Several methods are used for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ±10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an authorized reseller install the part.

For more information on static electricity or assistance with product installation, contact an authorized reseller.

Specifications

Chassis environmental specifications

Specification	Value
Temperature range*	—
Operating	10°C to 35°C (50°F to 95°F)
Non-operating	-30°C to 60°C (-22°F to 140°F)
Maximum Wet bulb temperature	—
Operating	28°C (82.4°F)
Non-operating	38.7°C (101.7°F)
Relative humidity (noncondensing)**	—
Operating	10% to 90%
Non-operating	5% to 95%

* All temperature ratings shown are for sea level. An altitude derating of 1°C per 304.8 m (1.8°F per 1000 ft) to 3048 m (10,000 ft) is applicable. No direct sunlight allowed. Upper operating limit is 3,048 m (10,000 ft) or 70 kPa/10.1 psia. Upper non-operating limit is 9,144 m (30,000 ft).
** Storage maximum humidity of 95% is based on a maximum temperature of 45°C (113°F). Altitude maximum for storage corresponds to a pressure minimum of 70 kPa (10.1 psia).

Chassis specifications

Specification	Value
Height	18.96 cm (7.46 in)
Depth	84.91 cm (33.43 in)
Width	44.33 cm (17.45 in)
Weight, fully loaded	81.65 kg (180.00 lb)
Weight, empty	43.09 kg (95.00 lb)

Support and other resources

Before you contact HP

Be sure to have the following information available before you call HP:

- Technical support registration number (if applicable)
- Product name
- Chassis serial number
- Product identification number
- Applicable error messages
- Operating system type and revision level

To obtain product information, log in to iLO CM firmware and use the `Show Chassis Info` command. For more information, see the *HP Moonshot iLO Chassis Management Firmware User Guide* in the HP Moonshot Information Library (http://www.hp.com/go/moonshot/docs).

HP contact information

For United States and worldwide contact information, see the Contact HP website (http://www.hp.com/go/assistance).

In the United States:

- To contact HP by phone, call 1-800-334-5144. For continuous quality improvement, calls may be recorded or monitored.
- If you have purchased a Care Pack (service upgrade), see the Support & Drivers website (http://www8.hp.com/us/en/support-drivers.html). If the problem cannot be resolved at the website, call 1-800-633-3600. For more information about Care Packs, see the HP website (http://pro-aq-sama.houston.hp.com/services/cache/10950-0-0-225-121.html).

Acronyms and abbreviations

CM

chassis management

CMU

HP Insight Cluster Management Utility

CSR

Customer Self Repair

DHCP

Dynamic Host Configuration Protocol

ESD

electrostatic discharge

ID

identification

IPMI

Intelligent Platform Management Interface

MAC

Media Access Control

PDU

power distribution unit

PXE

preboot execution environment

SL-APM

HP ProLiant SL Advanced Power Manager

UID

unit identification

UPS

uninterruptible power system

Documentation feedback

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Index

A

access panel 8
authorized reseller 32

B

batteries, replacing 27
battery 27
before you contact HP 32

C

cartridge blank 9, 26
cartridge components 6, 20
cartridge installation 10, 12, 13
cartridge link LED/button 5
cartridge power LED 5
cartridge removal 10
cartridge UID LED/button 5
cartridge, powering up 13
cautions 22
chassis environmental specifications 31
chassis specifications 31
chassis, install in rack 12
CMU 16
compliance 29
components 5, 19, 20
configuration of system 16
configuring the cartridge 14
contact information 32
contacting HP 32
CSR (customer self repair) 19
customer self repair (CSR) 19, 32

D

Declaration of Conformity 29
diagnosing problems 18
documentation feedback 35
drive 15, 20, 22
drive bays 6
drive health LED 5
drive, installing 12
drive, removing 22
drive, replacing 22

E

electrostatic discharge 21, 30
environmental requirements 31

F

firmware upgrade utility, troubleshooting 18

G

grounding methods 30

H

help resources 32
HP contact information 32
HP Insight Cluster Management Utility 16
HP Moonshot Component Pack 17
HP Moonshot iLO Chassis Management Firmware 16
HP technical support 32
HP website 32
HP, contacting 32

I

installation, chassis 12
installing a cartridge 10, 12, 13
installing a drive 12
installing an operating system 14
installing the access panel 9

L

LED, cartridge health 5
LED, drive health 5
LED, link 5
LEDs 5
LEDs, troubleshooting 18
link LED 5

O

operating system installation 14

P

part numbers 19, 20
power up procedure 13
powering up the cartridge 13
preparation procedures 7, 21

Q

QuickSpecs 16

R

registering the server 14
regulatory compliance information 29
regulatory compliance notices 29
removal and replacement procedures 21
removing a cartridge 10, 23
replacement procedures 21
required information 32
required tools 21
resources 32
RoHS 29

S

safety considerations 21, 29
safety information 21, 29
server specifications 31
spare part numbers 19, 20
specifications 31
specifications, environmental 31
static electricity 21
support 32
support and other resources 32
switch module, configuring 12
switch module, installing 12
symbols on equipment 21
system board battery 6, 20
system board components 6

T

technical support 32
telephone numbers 32
troubleshooting 18
troubleshooting resources 18

U

uplink module, configuring 12
uplink module, installing 12
utilities 16

W

warnings 22
warranty information 29
website, HP 32